

FIGURE 1



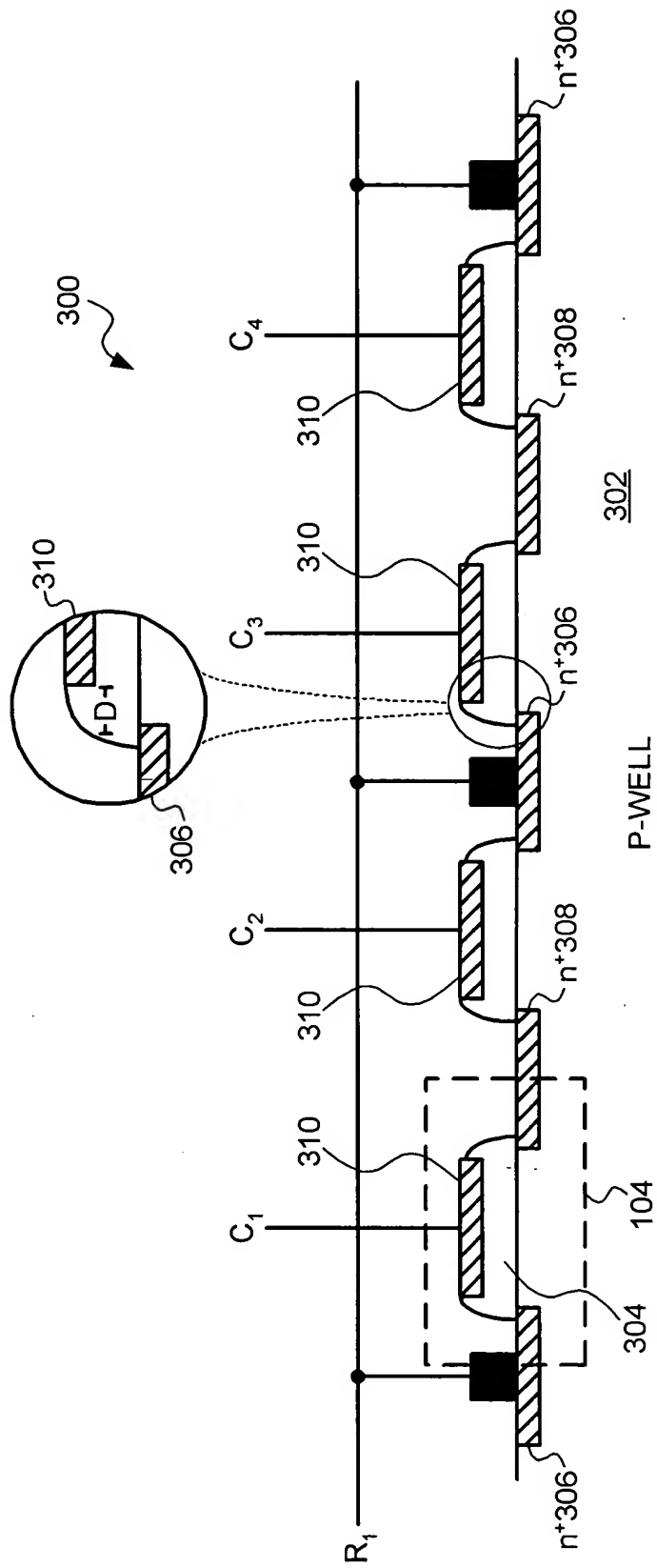
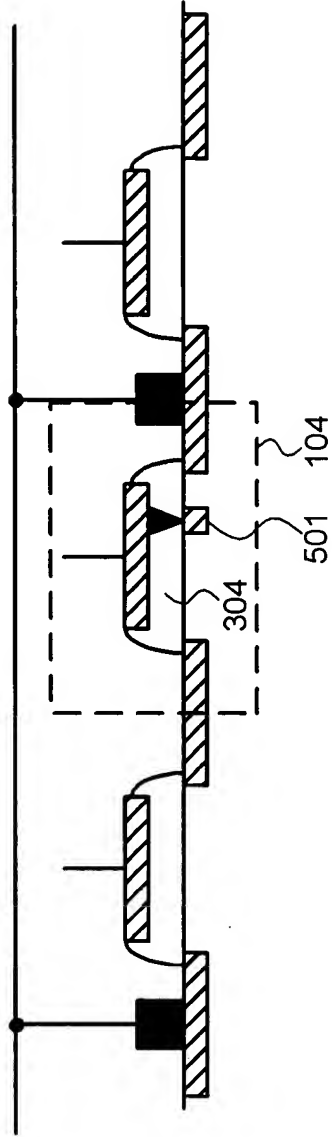


FIGURE 3

		VBL (V)	VWL (V)	PROGRAM	
PROGRAM	SC/SR	8	0	YES	401
	SC/UR	8	8	NO	403
	UC/SR	3.3	0	NO	405
	UC/UR	3.3	8	NO	407
				ISENSE	
READ	SC/SR	1.8	0	YES	409
	SC/UR	1.8	1.8	NO	411
	UC/SR	0	0	NO	413
	UC/UR	0	1.8	NO	415

FIGURE 4



**FIGURE 5**

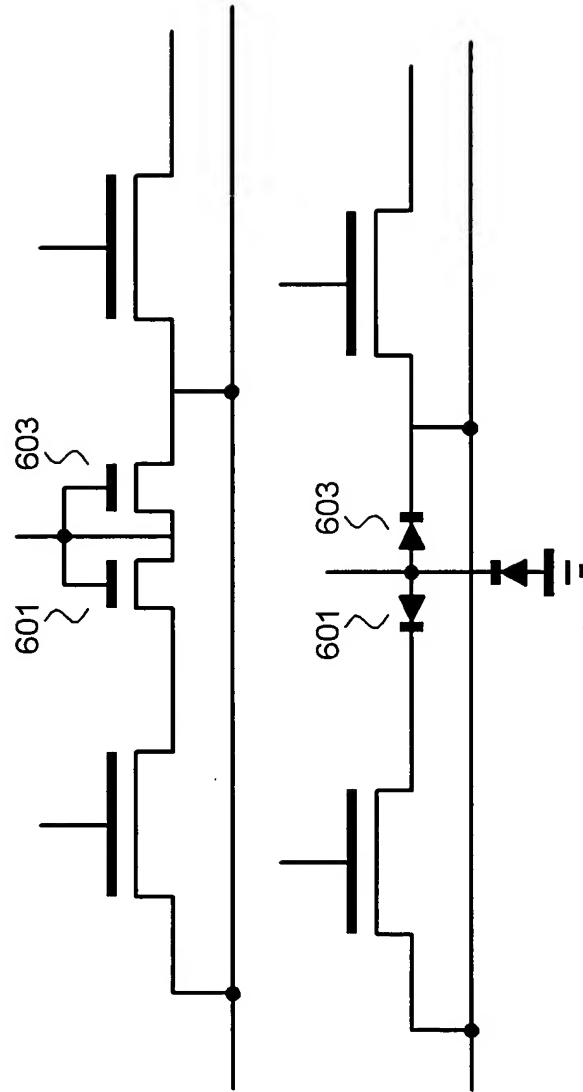
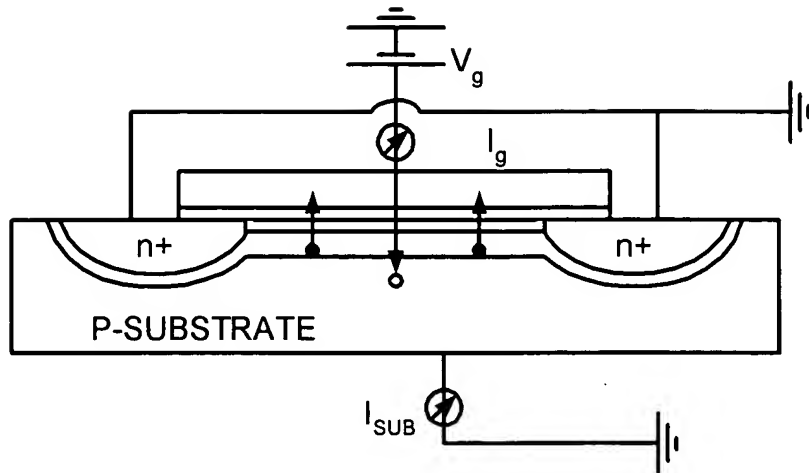
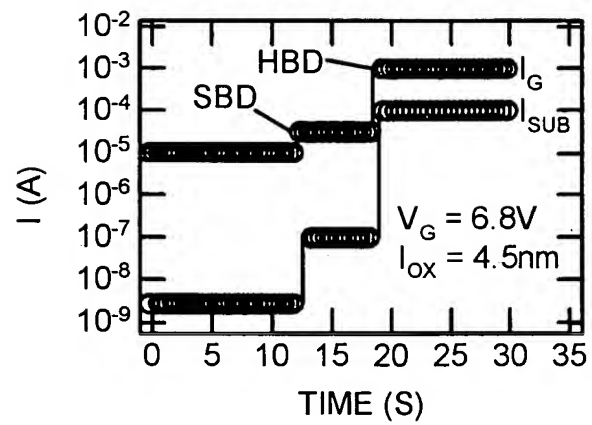


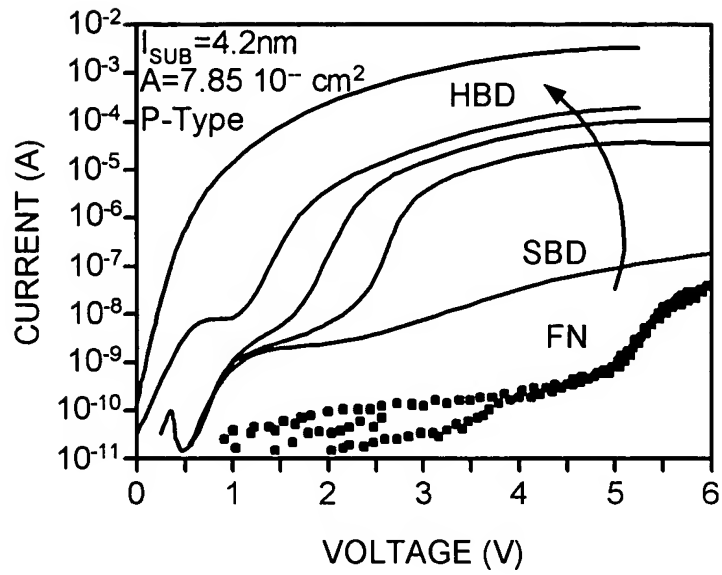
FIGURE 6



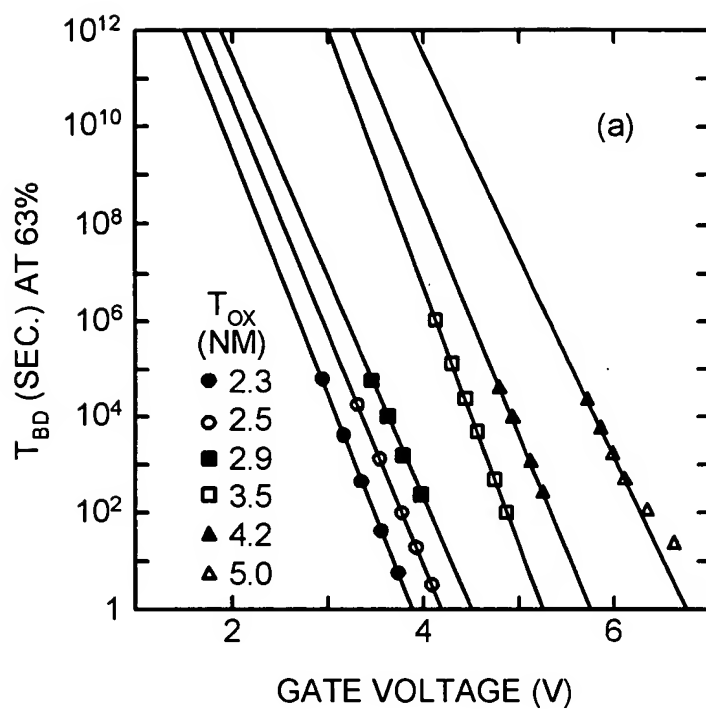
**FIGURE 7**

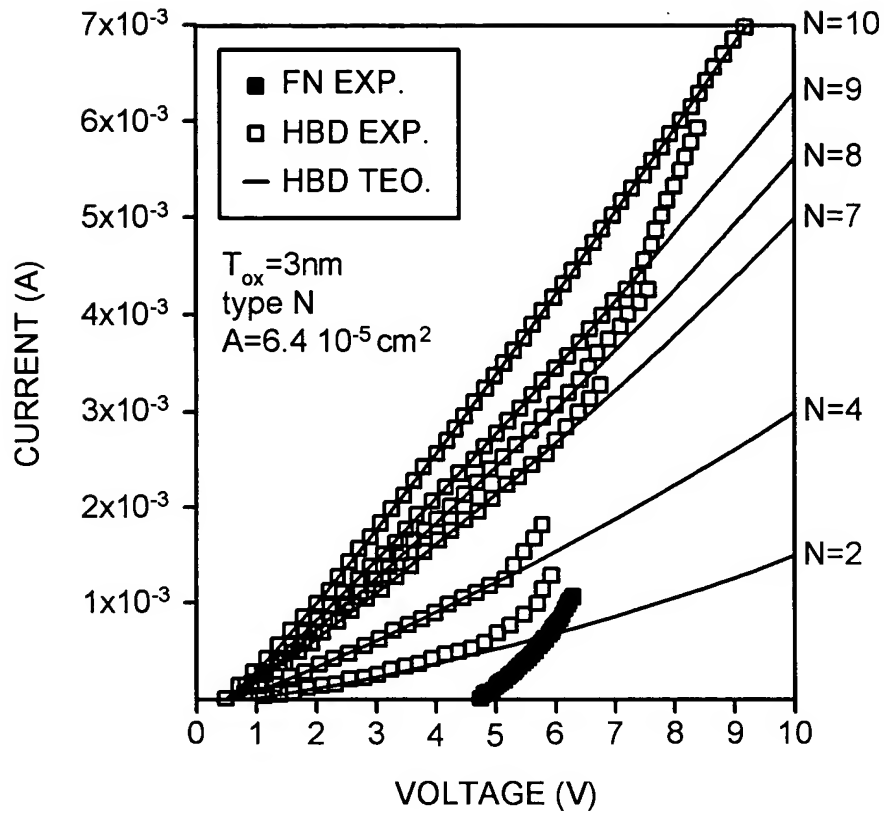


**FIGURE 8**

**FIGURE 9**



**FIGURE 10**

**FIGURE 11**

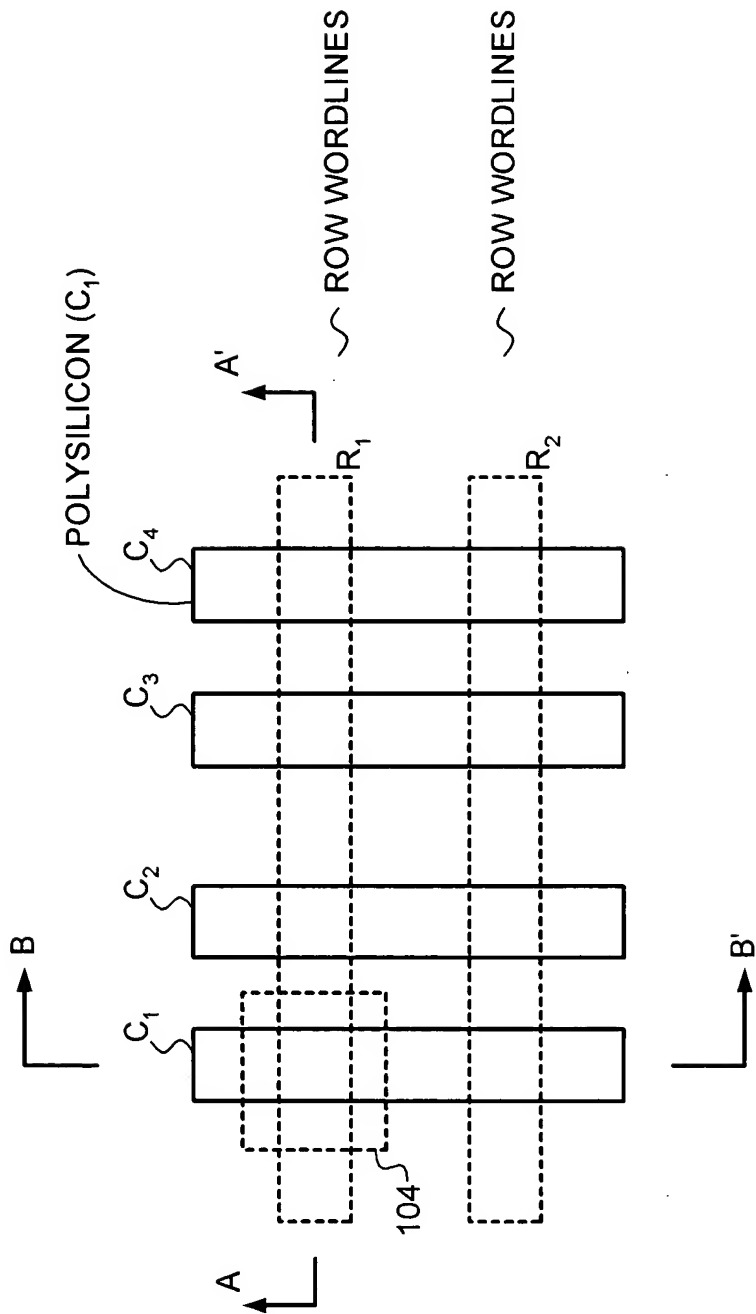


FIGURE 12

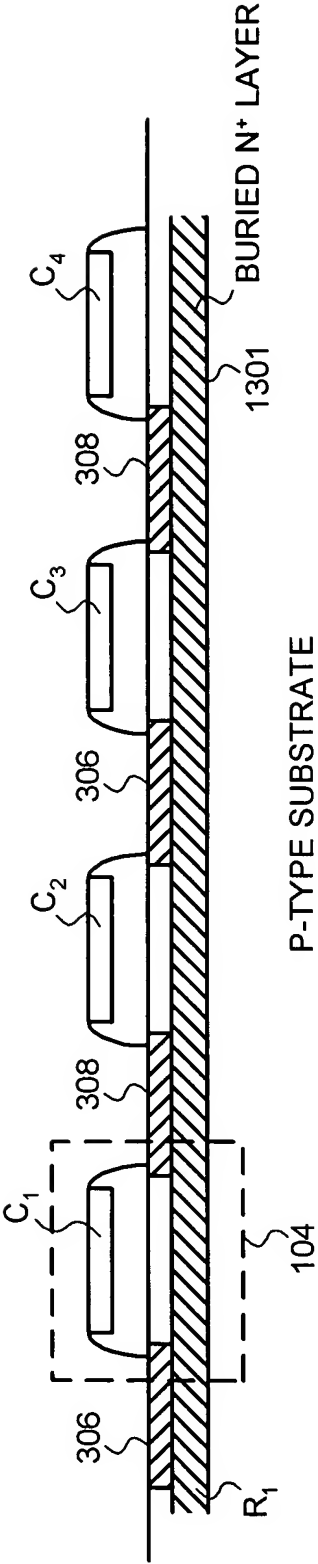
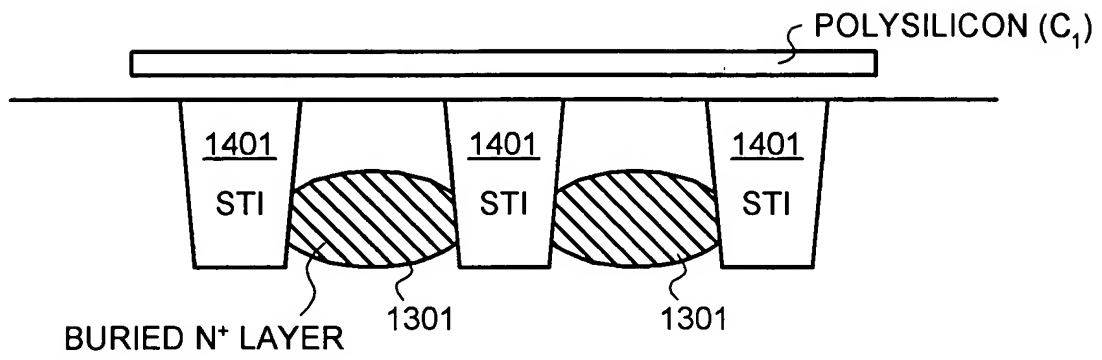
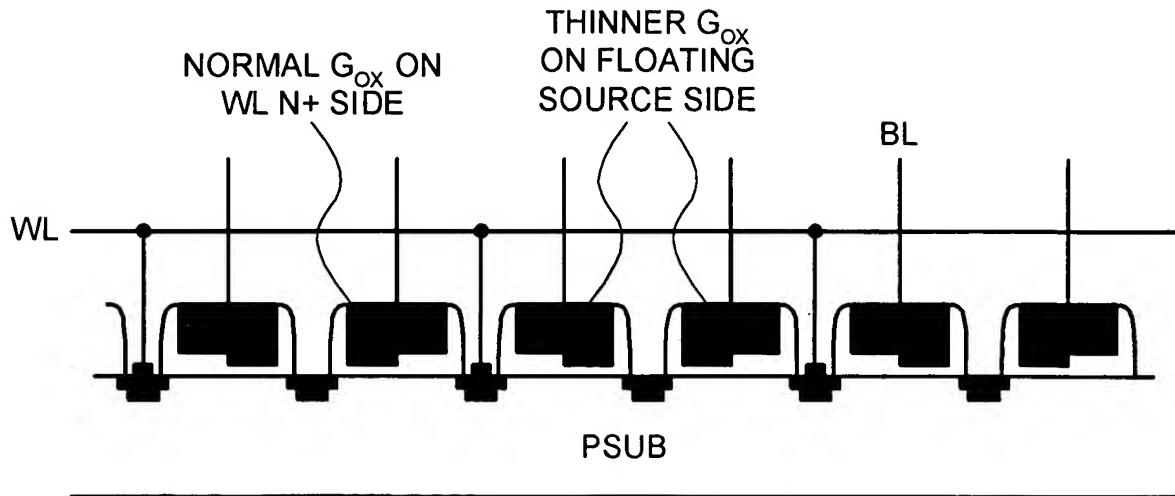
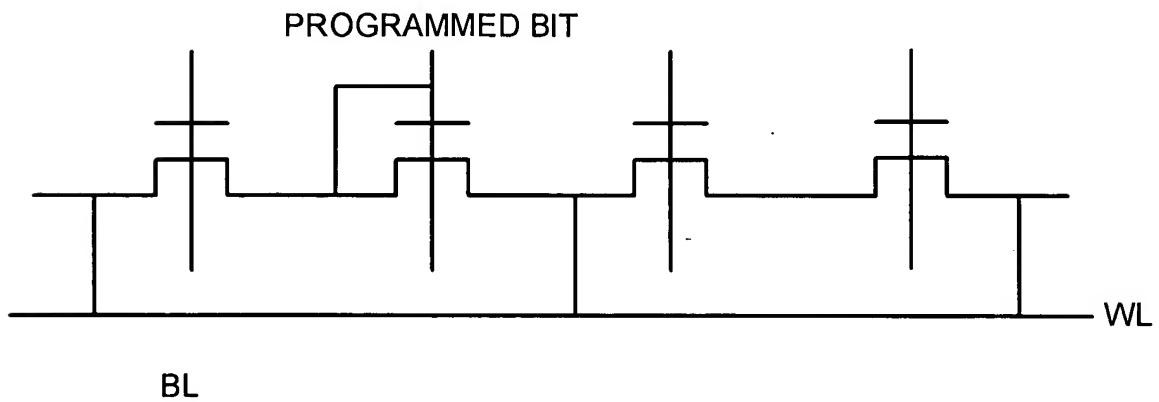


FIGURE 13

**FIGURE 14**

		VBL (V)	VWL (V)	PROGRAM	
PROGRAM	SC/SR	$V_{PP}$	0	YES	401
	SC/UR	$V_{PP}$	FLOATING	NO	403
	UC/SR	$< 0.5\text{ V}$	0	NO	405
	UC/UR	$< 0.5\text{ V}$	FLOATING	NO	407
READ				$I_{SENSE}$	409
	SC/SR	$V_{DD}\text{ OR }V_{CC}$	0	YES	411
	SC/UR	$V_{DD}\text{ OR }V_{CC}$	$V_{DD}\text{ OR }V_{CC}$	NO	413
	UC/SR	0 OR FLOAT	0	NO	415
	UC/UR	0 OR FLOAT	$V_{DD}\text{ OR }V_{CC}$	NO	

FIGURE 15

**FIGURE 16****FIGURE 17**

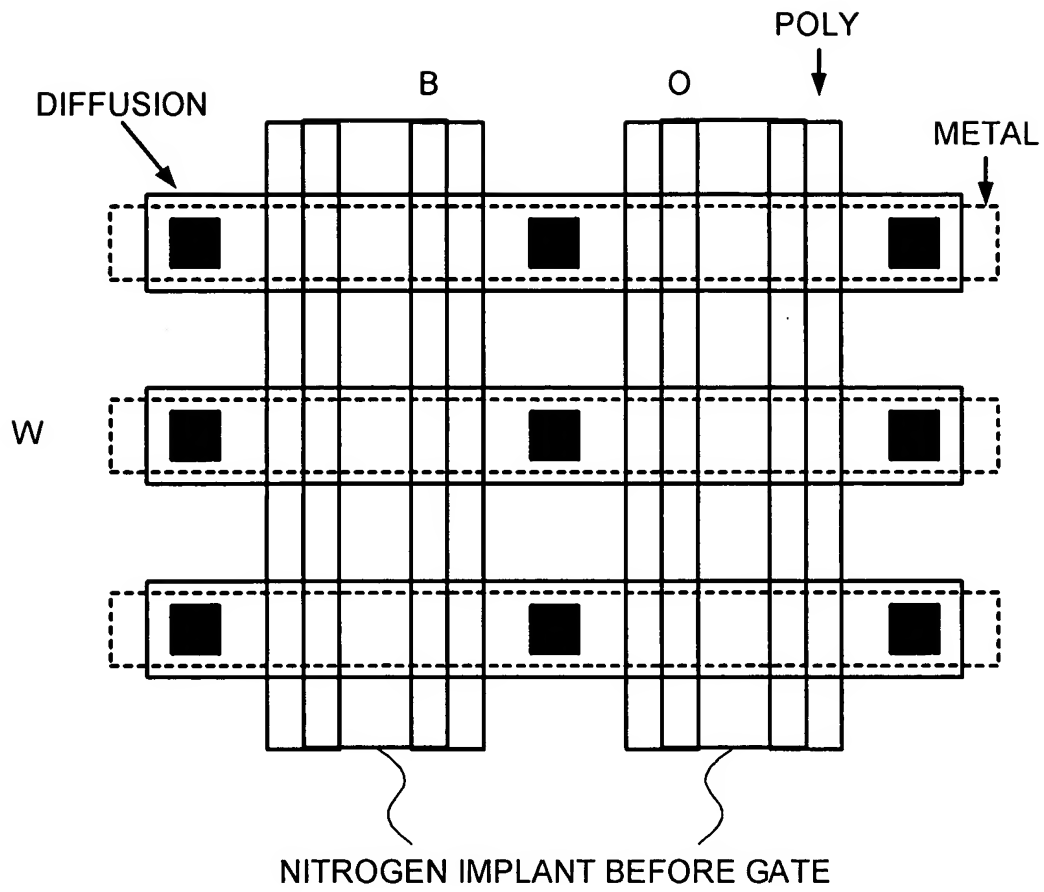
0.18um/0.13um XPM CX CELL OPERATION

		VBL (V)	VWL (V)	PROGRAM
PROGRAM	SB/SW	V <sub>PP</sub>	0	YES
	SB/UW	V <sub>PP</sub>	PC TO V <sub>PP</sub> /2 AND FL	NO
	UB/SW	< 0.5 V	0	NO
	UB/UW	< 0.5 V	PC TO V <sub>PP</sub> /2 AND FL	NO
				I <sub>SENSE</sub>
READ	SB/SW	V <sub>DD</sub> OR V <sub>CC</sub>	0	YES
	SB/UW	V <sub>DD</sub> OR V <sub>CC</sub>	V <sub>DD</sub> OR V <sub>CC</sub>	NO
	UB/SW	0	0	NO
	UB/UW	0	V <sub>DD</sub> OR V <sub>CC</sub>	NO

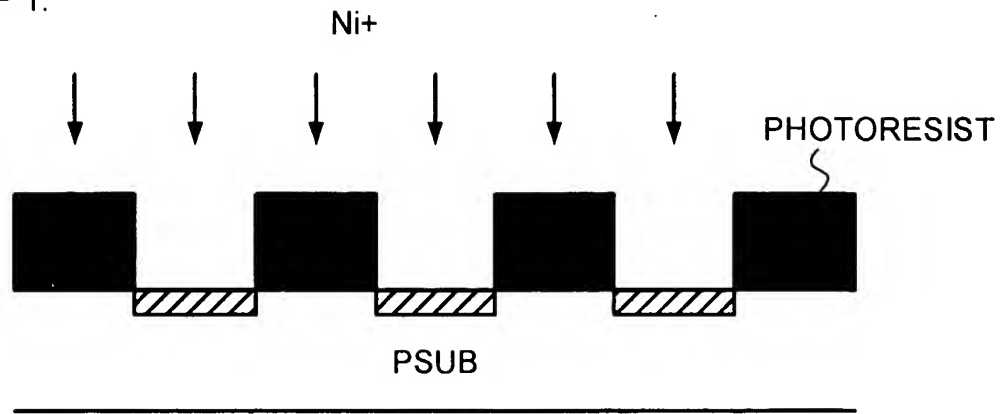
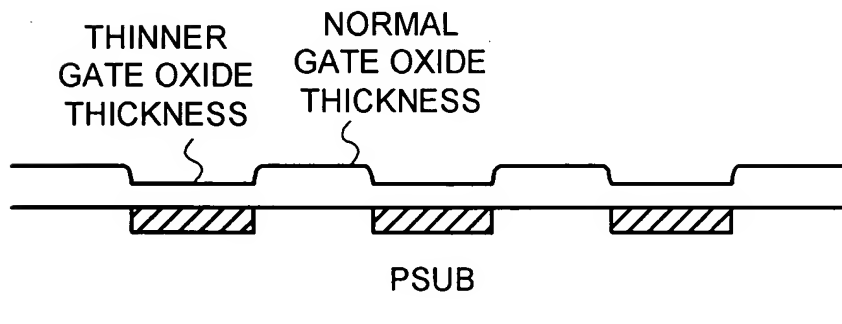
V<sub>PP</sub> = 8~9V FOR G<sub>ox</sub>=32A (0.18um) OR 5-7 FOR G<sub>ox</sub>=20A, OR 3~4.5 V  
FOR 10-15A (5 TO 10A THINNER THAN NORMAL STANDARD GATE OXIDE).  
V<sub>DD</sub> = I/O VOLTAGE 3.3V OR 2.5V  
V<sub>CC</sub> = 1.8V FOR 0.18um AND 1.2V FOR 0.13um

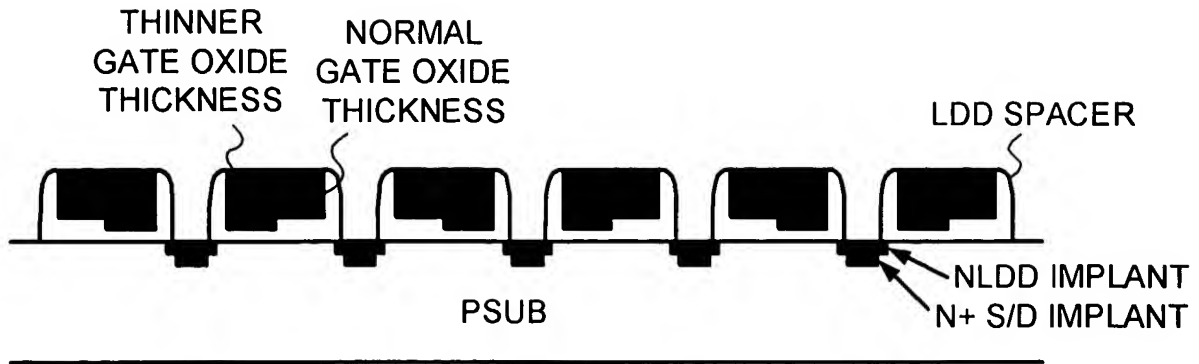
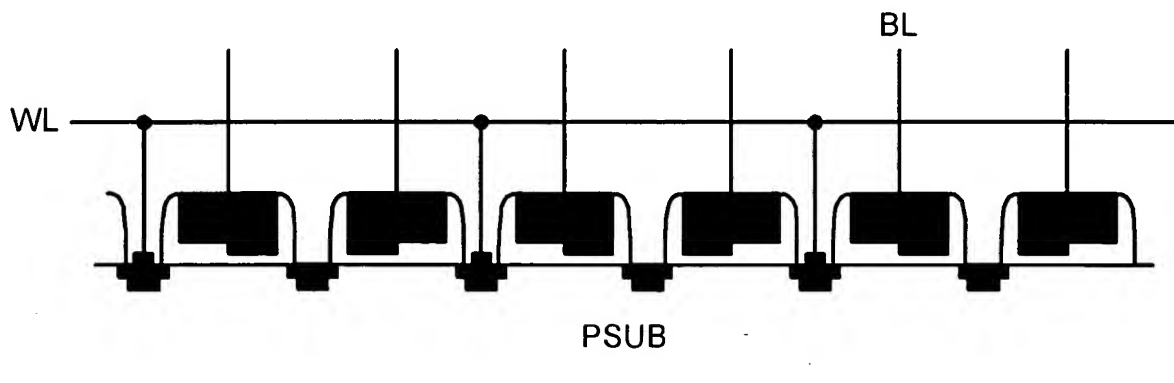
FIGURE 18

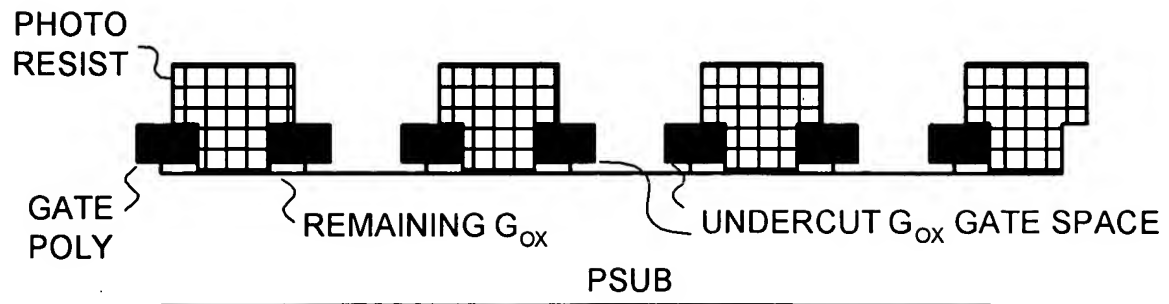
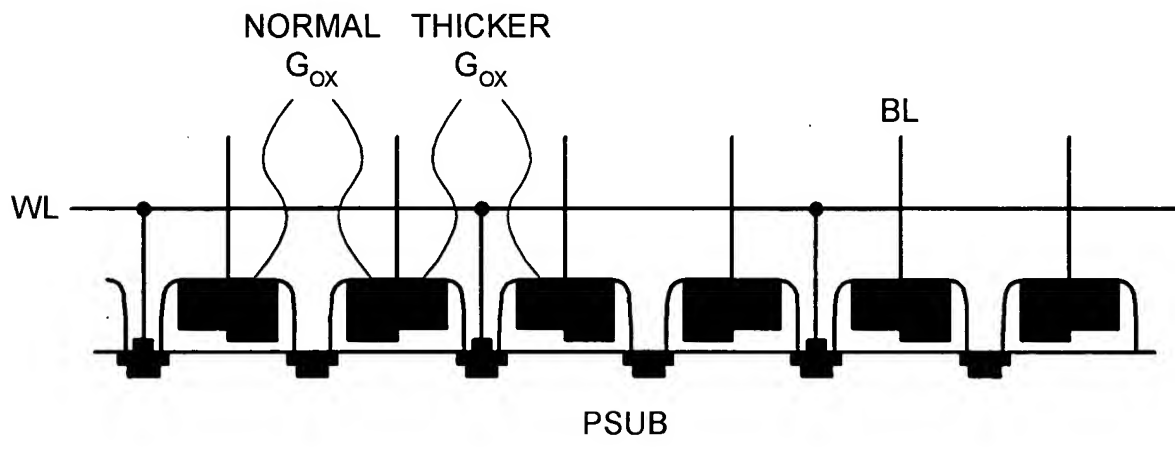


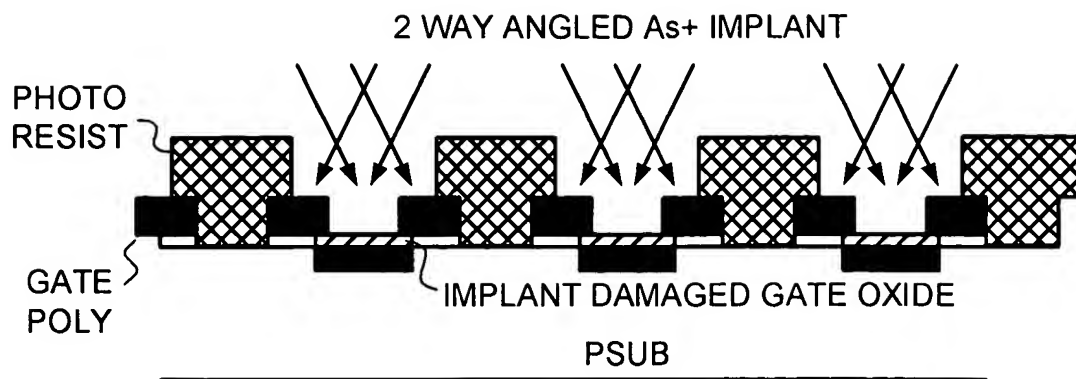
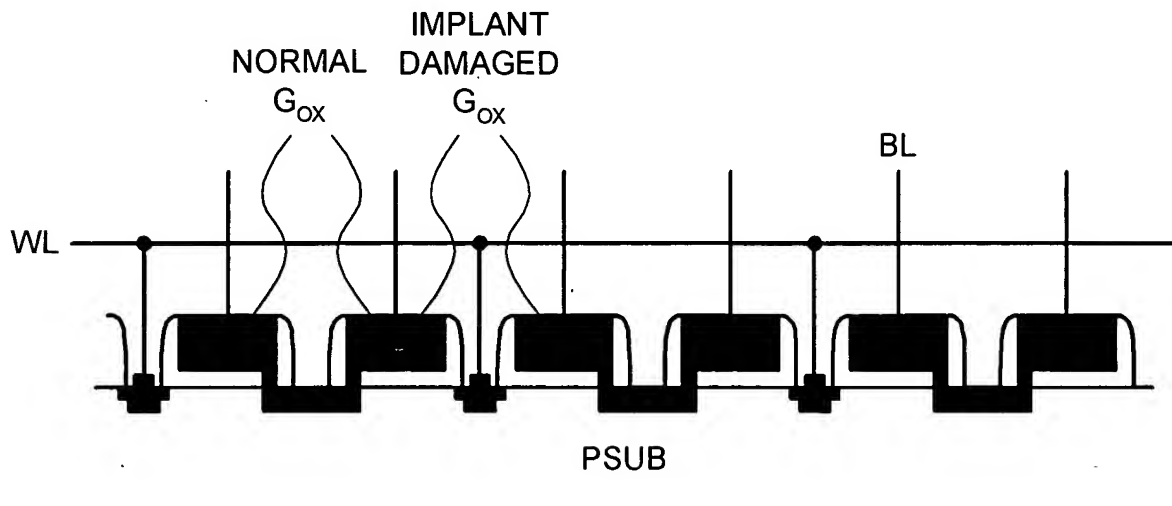
**FIGURE 19**

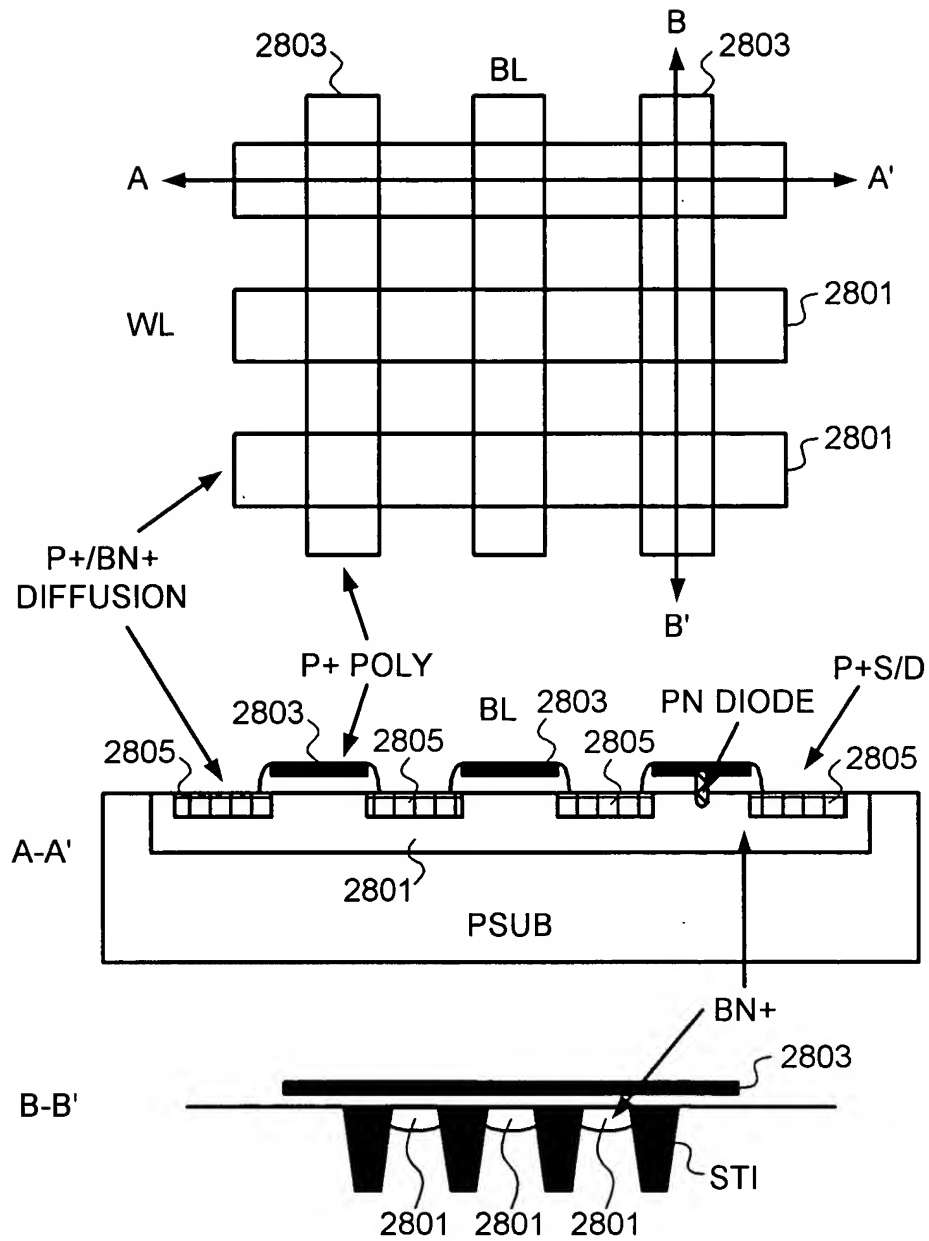
STEP 1:

**FIGURE 20****FIGURE 21**

**FIGURE 22****FIGURE 23**

**FIGURE 24****FIGURE 25**

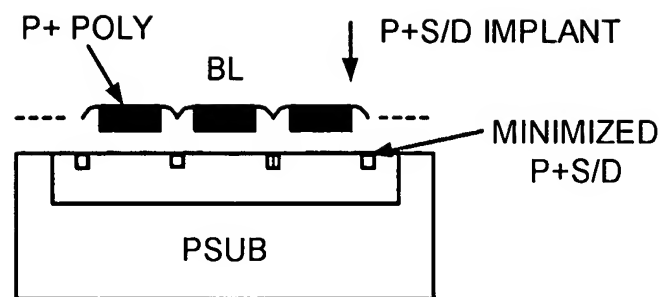
**FIGURE 26****FIGURE 27**

**FIGURE 28**

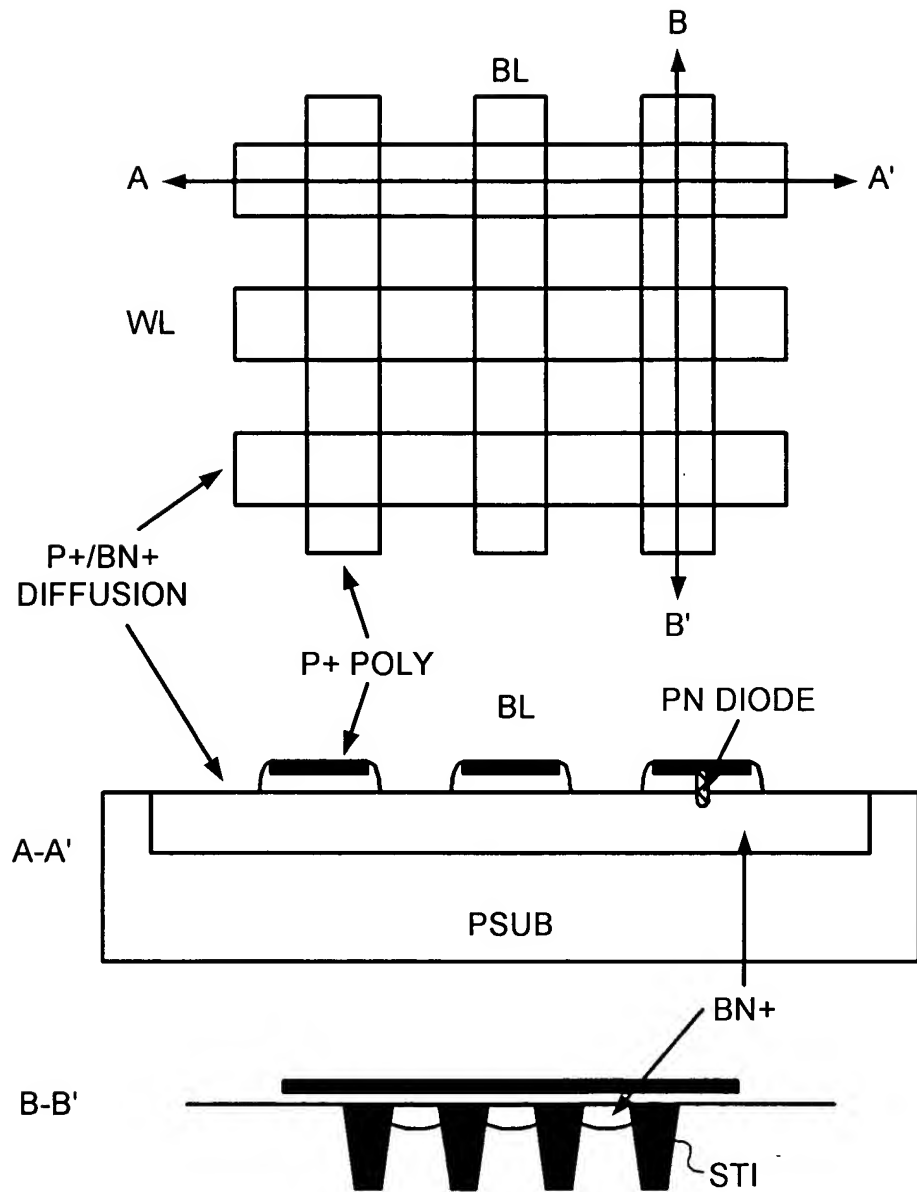
XPM P+POLY/BN+ 1T CELL OPERATION

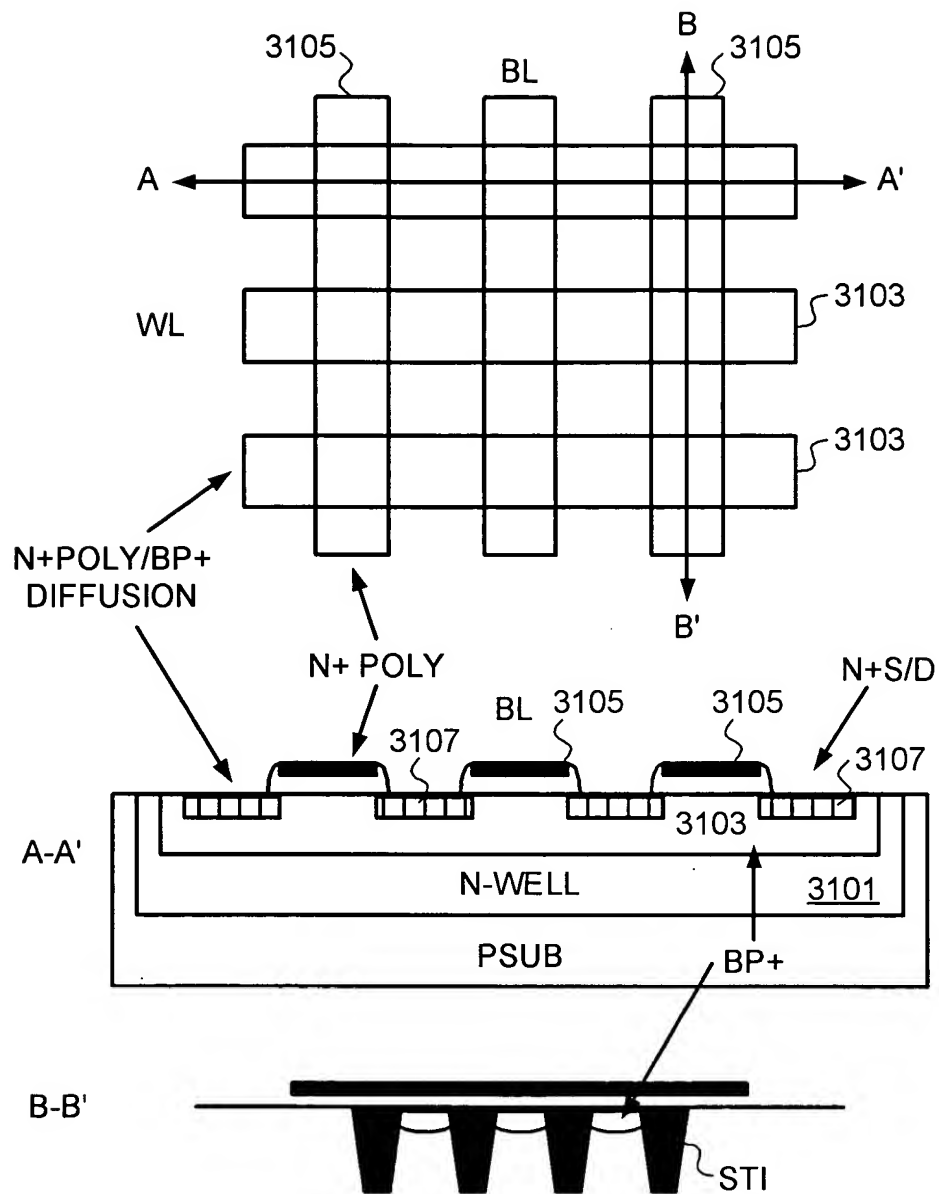
		VBL (V)(P+POLY)	VWL (V)(BN+DIFFUSION)	PROGRAM
PROGRAM	SC/SR	$V_{BP}$	$V_{WP}$	YES
	SC/UR	$V_{BP}$	FLOATING	NO
	UC/SR	$< 0.5 V$	$V_{WP}$	NO
	UC/UR	$< 0.5 V$	FLOATING	NO
				$I_{SENSE}$
READ	SC/SR	$V_{RD}$	0	YES
	SC/UR	$V_{RD}$	$V_{RD}$	NO
	UC/SR	0	0	NO
	UC/UR	0	$V_{RD}$	NO

FIGURE 29

**FIGURE 28A**



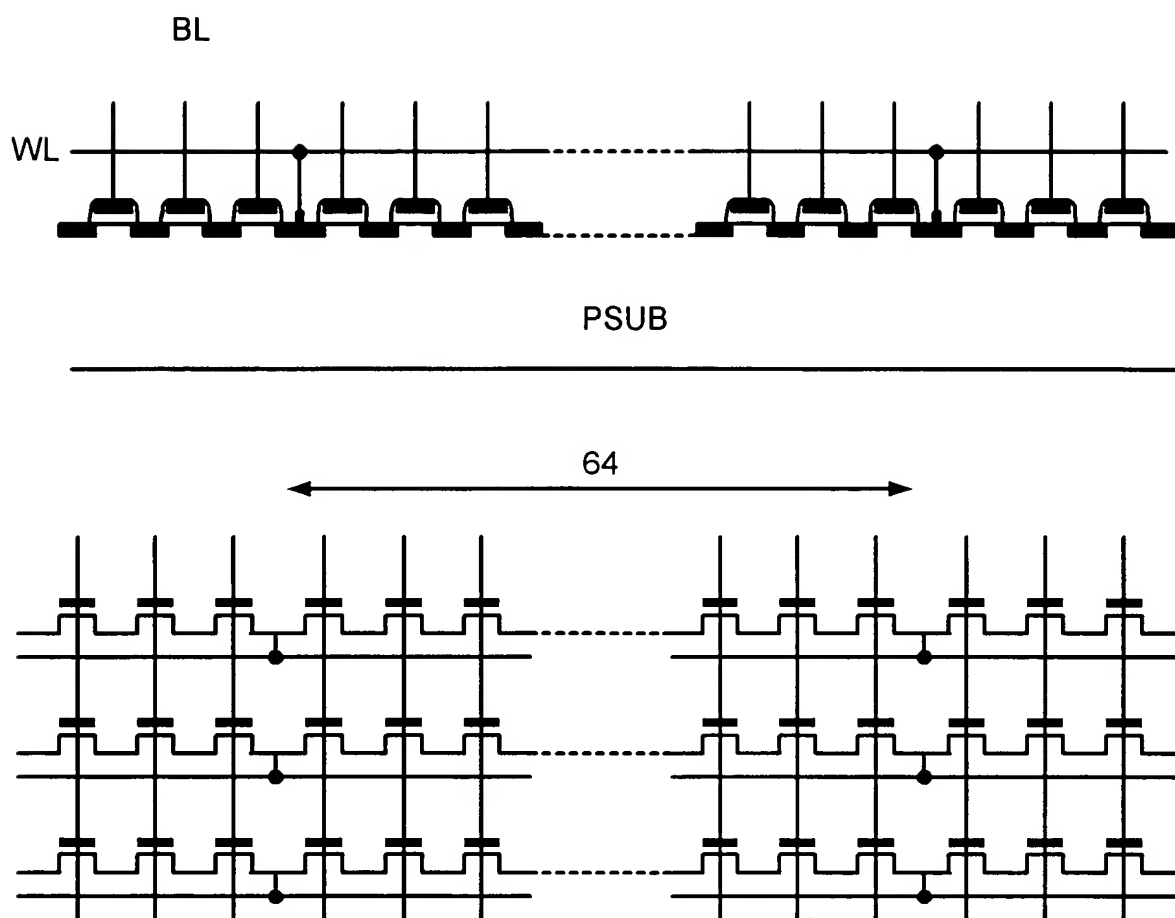
**FIGURE 30**

**FIGURE 31**

XPM N+POLY/BP+ 1T CELL OPERATION

		VBL (V)(N+POLY)	VWL (V)(BP+)	N:-	PROGRAM
PROGRAM	SC/SR	$V_{BP}$	$V_{WP}$	$V_{WP}$	YES
	SC/UR	$V_{BP}$	FLOATING	$V_{WP}$	NO
	UC/SR	(0 ~ -	$V_{WP}$	$V_{WP}$	NO
	UC/UR	(0 ~ -	FLOATING	$V_{WP}$	NO
					$I_{SENSE}$
READ	SC/SR	0	$V_{RD}$	$V_{DD}$ OR $V_{RD}$	YES
	SC/UR	0	0	$V_{DD}$ OR $V_{RD}$	NO
	UC/SR	$V_{RD}$	$V_{RD}$	$V_{DD}$ OR $V_{RD}$	NO
	UC/UR	$V_{RD}$	0	$V_{DD}$ OR $V_{RD}$	NO

FIGURE 32

**FIGURE 33**